PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Developing Patient Education to Enhance Recovery after Colorectal Surgery Through Action Research: A qualitative study.
AUTHORS	Poland, Fiona; Spalding, Nicola; Gregory, Sheila; McCulloch, Jane; Sargen, Kevin; Vicary, Penny

VERSION 1 - REVIEW

REVIEWER	Lee-lynn Chen University of California at San Francisco, USA
REVIEW RETURNED	30-Aug-2016

GENERAL COMMENTS	Major revisions Abstract: Line 6: Objective is to identify the needs of patients, to modify current practices to satisfy this need, and to evaluate the effectiveness of the change. Line11: Design: Qualitative study using observations, questionnaires, semi-structured longitudinal interviews, focus groups, and documentation review. Line 17: Setting: please indicate size of hospital and location. For example: An 500 hundred bed NHS hospital located in an urban city in the UK. This would provide the reader an idea of the setting. Line 20: 97 patients - out of how many patients who had colorectal surgery? Also please provide a time frame in which data was collected. Line 22: Results: what percentage of the 97 patients surveyed articulated their need? Line 50: Strengths and Limitations: The limitations should also include any comments on any limitations to the design of the questionnaires, the process of data collection, and the consistency of the data collected and how it was processed. Remove Table 1 from the abstract. The information should be contained in the conclusion section. Methods: Line26-49: This section would be a good addition to the Introduction part of the paper.

	Methods section tells what was done. Placing the Procedures section as the first section jumps to the point. Start the Methods section with line 54 on page 8 then end on page 9, line 11. Then under Procedures section, start with page 9, line 16 (Meyer's (18) four-step action…) Line 21: What is the inclusion criteria? Explain how patients were selected or rejected for this study. Place this information in a figure, instead of typing a section out on page 10 line 16. Line 47: Please attach in a figure Spradlely's descriptive schedule. Not all readers know what this is. Line 50: Please provide a sample of the evaluation questionnaire. Line 54: Please elaborate on what semi-structured staff interview entails. Analysis: Line 50: Two broad themes were identified: Please provide statics of data collected. For example: The study included 97 patients. Of those 97 patients how many said the delivery of patient education materials were deemed successful? 75%? 80%? What were the top suggestions from patients, carers, and healthcare professionals? Please provide percentages. If there are statistical analysis, it would be possible to figure out if indeed there is sufficient power to the study. 97 patients is a small number to have to prove that changes made to a system truly affects the system or surgical pathway and outcome. In addition, qualitative studies require a lot of time in terms of interviews and post-interview analysis. Is it possible to analyze the amount of time spent, the cost of this study, and how do these educational materials provide a reduction in cost of colorectal surgery in terms of length of stay or other parameter that could be measured? If patient and carer satisfaction are the only parameter that can be improved, what were the cost of printing these materials? Results: The results really showed how this hospital can improve on patient services and education. In other hospitals, these issues have been addressed in their "Pre-operation" clinics. In terms of dietary advice and hospital food, other hospitals already have systems placed where doctors and nurses could order special diets with a click of a computer screen. "Clear liquid diet" At other hospitals, there are patient websites with videos and printed materials educating the patients about the surgery including: pre-op, intra-op, and post-op. Some surgical services have apps that the patients can download onto their smart phone. In addition, at other hospitals who have set up surgical pathways, there are monthly meetings of multidisciplinary teams: surgeons,

	anesthesiologists, nurses, nutritionists, occupational and physical therapists, social workers, and pharmacists. They provide an integrated input on how to implement best practice guidelines for their specialty. The data collected have shown a decrease in length of stay in the hospital after surgery. This study showcases an important aspect of how a hospital can change to improve the pre-op and post-op environment for the patients. However, this change is only one aspect of a perioperative pathway. The information provided from this study improves this hospital; however it does not provide new information for other hospital systems that have a mature perioperative pathway. Comments: It is good to see a hospital implement changes to help improve patient's experience via education and feedback. However, the information uncovered is very specific to this hospital. In other hospitals, these issues have been resolved. The satisfaction surveys of the patients are important for providing good service; however this does not reflect an improvement in recovery after surgery. For example, if the pre-op, intra-op, and post-op procedures are all variable between surgeons, and surgical teams, the recovery of the patients after surgery with consistent patient education, might not change the length of stay in the hospital.

REVIEWER	Lesley Gotlib Conn Sunnybrook Research Institute Canada
REVIEW RETURNED	12-Oct-2016

GENERAL COMMENTS	The paper reports on the development of patient education materials for enhanced recovery after surgery for colorectal surgery patients. The approach taken was mixed methods action research which engaged patients and their carers, as well as health care team members, in the design and evaluation of iterative cycles of pre-operative education material. In this paper the authors report on the qualitative interview data that informed their materials. They draw mainly on the patient and carer perspectives. The topic is certainly relevant as there is increasing use of enhanced recovery programs worldwide for many surgical procedures with an emphasis on tailored preoperative patient education and preparedness. In this case, the action research approach makes logical sense to involve all key stakeholders in the development of patient education which is shown to contribute to improved outcomes when effectively matched to the patients needs. Overall I found the paper to be interesting. There are several areas where the reporting of this study could be strengthened and in doing so would put readers in a better position to use these findings to inform the delivery of ERAS patient education in their own settings. In its current form, the reader has very little sense of the context in which this research took place – the actual environment and by whom patient education is initially delivered and when and where it may be reinforced or, as one patient pointed out, contradicted. Is it the surgeon, a clinical nurse, a pre-admission unit nurse, and/or other staff who is counseling patients? Are written materials and counseling offered together, in sequence, etc? The authors have

	stressed that both education materials and the education processes are important to the success of the initiative, however, there is not much reported on the processes themselves. Perhaps a visual timeline could help us better understand how the counseling process unfolds, and who is actually involved at what time points and with what effects. The authors might consider giving a brief description of what patients were receiving prior to the first action cycle as well – where they received it, who delivered it, at what time points in their pre/post operative journey these materials were delivered/educated. It would also help to have more detail about how the actual implementation of changes happened. The description in the current paper does not touch at all on this. What barriers were encountered, if any, and how was the team able to address or overcome them? For example, some of the suggested changes appear not to be "quick fixes", such as the appropriateness of hospital food offered to patients. I also wondered about changes in the actual process of educating patients –did patients value being counseled more or less by different team members (e.g. surgeon v. nurse)? The data presented focus mainly on updating written or online material only. Were there any insights about the delivery of information from different team members, i.e. the processes? Given the large participant group and amount of data collection that the authors describe, the analysis seems a bit thin. The perspectives of the health care staff are largely absent from the paper – except for one quote. There is no methodology described for the qualitative approach. I did not find that the results section led me to be convinced of the concept of 'situated understanding' that the authors' put forth in the discussion. If this is the theory that has emerged as most salient from the findings, it may make sense to re-organize the results to substantiate this claim. There is likely some rich data that has not been included that would help to strengthen the authors' position on this point and give a reader a sense of how 'situated understanding' is produced in the pre-operative encounters between clinicians and their patients. Subsequently, the authors might demonstrate the variables or factors that promote or inhibit 'situated understanding' in this context. Lastly, I wondered if the information in figure 1 could be presented on a timeline to more clearly depict the order of events over time. Or perhaps as Cycle 1, Cycle 2, Cycle 3 with the relevant methods and participants indicated within each cycle? This would help the reader better visualize the iterative process of data collection, analysis, reflection/evaluation which is a bit confusing in the current image. This would also give us a sense of how long it took to make the changes, test them out, and evaluate.

REVIEWER	Lucia Zannini Department of Biomedical Sciences for Health, Univ Milan, Italy
REVIEW RETURNED	18-Oct-2016

GENERAL COMMENTS	General comments This is a paper on a core topic in public health, that is to say patient education. Through it, heath systems can improve patients' outcomes and the efficiency of care.

	The multi-method study described here, carried on as an action research, has involved not only patients and carers, but also healthcare professionals. I appreciated the choice of involving a patient in the research group. Nevertheless, the study design, its objectives and the main results are quite weak. I am therefore unable to recommend the publication of this paper in its actual form. Title The title: “Developing Patient Education to Enhance Recovery after Colorectal Surgery” does not completely fit the con tents of the paper. This is mostly concentrated on which information patients need to cope with colorectal surgery, and enhanced recovery is just supposed to be a consequence of education, but it is not investigated in depth. Many aspects influence patient’s perception of enhanced recovery, not only effective education about that process, but also the level of autonomy of the patient, his/her socio-economic status, the possibility of counting on a caregiver, once at home. Abstract The abstract is consistent with the paper. I do not feel comfortable with “the depth of detail in the findings” you talk abou t here (see below). Introduction Although the significance of the study is described in Table 1, you should make more explicit the rationale of your research: It is unclear how this study extends knowledge or fills a gap of knowledge about ERAS experiences in colorectal surgery. Patient education is one of the components of enhanced recovery; in this complex process, indeed, other components must be taken into in consideration; for example, the ability of healthcare professionals to select interventions that can be proposed earlier to surgery patients. The context should be described more in detail (i.e. how many professionals are involved in the peri-operative process? How many in patient education? How many beds do you have in your ward?) in order to let the reader understand if the experience described here can be replicated in his/her context. In any case, your research question should be specified at the end of the Introduction. Methods The choice of qualitative method to explore patients’ experience of colorectal surgery and their educational needs is well explained and documented. Nevertheless, I think that action research is not a “method”, but a research strategy. Defining the qualitative research method you have chosen is pivotal to evaluate the coherence between you research question and the selected method and, what is more, between research method and data analysis process.

	Considering the data you have collected, I would define this study a "mixed-method" one, but, again, you need to define your search question, showing that, to be answered, different type of data must be collected. Participants It seems that participants were selected on a convenience basis. This is not considered the gold standard in qualitative research. You should explain why you chose that sampling method and when and why you stopped sampling. Moreover, you should point out how many participants refused participating in the research and why. Ethical considerations The study adheres to ethical standards. Data collection It is not clear whether the data collected in each phase come from the same patients (i.e.: are the observed patients the same that were later interviewed, in three different moments?). Considering that after each phase of the action research you introduced some innovations in the educational process, it is not clear to me whether you utilized the same instruments to gather data (i.e., the same questionnaire, the same interview grid). If yes, those instruments could have revealed inadequate in the second and third phase of the study, since you introduced innovations and the questionnaire or the interview should have been updated. Finally, I am not sure that an interview with the patient and his/her caregiver can be named "focus group" (which group?) . [Data analysis] Since a qualitative analysis have been carried on also on data gathered through questionnaires, it must be specified above (in "Procedures") that they were open-ended. If we consider data you collected in each phase (observations, questionnaires, focus groups, interviews), the procedure indicated for their analysis is quite superficial. Results Many data have been collected, in different phases, but I feel that they have not been valorized as they could have had. For example, you do not report in the findings data derived from the questionnaires. Furthermore, it is not clear if differences were found among patients with different education, age, gender and economical status.

	Educational needs can vary consistently, considering, for instance, the level of instruction of a patient and his/her capacity/possibility to have access to Internet. I recognize that Fig. 2 (Tab. 2?) contains many results, but they are not grounded on your data. Discussion I think that the discussion, even if synthetic and clear, is completely disconnected by both data and literature. The result of this study is a very general conclusion, which do not value the amount of information you gathered. I think that too many data are presented in this paper and, probably due to shortness of space, everything is exposed in a very synthetic but superficial manner.

VERSION 1 – AUTHOR RESPONSE

Many thanks for reviewing this article and providing such detailed suggestions for developing it further. Our responses to your requests are outlined in the table below. We hope our responses have addressed these, while also being mindful of the word count for this manuscript.

Reviewer: 1 Reviewer Name: Lee-lynn Chen	
Major revisions	
Abstract:	
Line 6: Objective is to identify the needs of patients, to modify current practices to satisfy this need, and to evaluate the effectiveness of the change.	Amended
Line11: Design: Qualitative study using observations, questionnaires, semi-structured longitudinal interviews, focus groups, and documentation review.	Amended
Line 17: Setting: please indicate size of hospital and location. For example: An 500 hundred bed NHS hospital located in an urban city in the UK. This would provide the reader an idea of the setting.	Amended
Line 20: 97 patients - out of how many patients who had colorectal surgery?	Amended
Also please provide a time frame in which data was collected.	Amended
Line 22: Results: what percentage of the 97 patients surveyed articulated their need?	Amended
Line 50: Strengths and Limitations: The limitations should also include any comments on any limitations to the design of the questionnaires, the process of data collection, and the consistency of the data collected and how it was processed.	Amended. However, no limitations in these aspects of the design were specified here as their development through the qualitative research process was sufficient and methods-appropriate.
Remove Table 1 from the abstract. The information should be contained in the conclusion section.	Amended
Methods:	
Line26-49: This section would be a good addition to the Introduction part of the paper. Methods section tells what was done. Placing the Procedures section as the first section jumps to the point.	Amended
Start the Methods section with line 54 on page 8 then end on page 9, line 11. Then under Procedures section, start with page 9, line 16 (Meyer's (18) four-step action…)	Amended
Line 21: What is the inclusion criteria? Explain how patients were	We think this is clear and

selected or rejected for this study. Place this information in a figure, instead of typing a section out on page 10 line 16.	further information not required
Line 47: Please attach in a figure Spradlely's descriptive schedule. Not all readers know what this is.	Amanded as listed within the text, rather than providing a figure.
Line 50: Please provide a sample of the evaluation questionnaire.	Appended Appendix 2
Line 54: Please elaborate on what semi-structured staff interview entails.	Amended
Analysis:	
Line 50: Two broad themes were identified: Please provide statics of data collected. For example: The study included 97 patients. Of those 97 patients how many said the delivery of patient education materials were deemed successful? 75%? 80%? What were the top suggestions from patients, carers, and healthcare professionals? Please provide percentages.	As this was a qualitative thematic analysis statistical summary of itemised and ranked responses was not appropriate.
If there are statistical analysis, it would be possible to figure out if indeed there is sufficient power to the study. 97 patients is a small number to have to prove that changes made to a system truly affects the system or surgical pathway and outcome.	As above, a power calculation was inappropriate to the aim of the study nor to the sample design.
In addition, qualitative studies require a lot of time in terms of interviews and post-interview analysis. Is it possible to analyze the amount of time spent, the cost of this study, and how do these educational materials provide a reduction in cost of colorectal surgery in terms of length of stay or other parameter that could be measured? If patient and carer satisfaction are the only parameter that can be improved, what were the cost of printing these materials?	This study did not aim to provide a cost-benefit or other quantitative calculation of outcomes and therefore these suggestions are not appropriate to the study design.
Results:	
The results really showed how this hospital can improve on patient services and education. In other hospitals, these issues have been addressed in their "Pre-operation" clinics. In terms of dietary advice and hospital food, other hospitals already have systems placed where doctors and nurses could order special diets with a click of a computer screen. "Clear liquid diet"	While other hospitals may have put these activities in place, we do not know how they may have been evaluated in context. The findings reported in this study report contextualised and integrated findings which also include and show organisation responses to patient experiences of the patients education system as a whole. This is explained in the discussion and conclusion on how a Situated understanding" was developed through the action research findings.
At other hospitals, there are patient websites with videos and printed materials educating the patients about the surgery including: pre-op, intra-op, and post-op. Some surgical services have apps that the patients can download onto their smart phone.	At the time of the study the study hospital provided DVDs, written and oral educational materials. This is what was evaluated – again in relation to the whole system of patient education.
In addition, at other hospitals who have set up surgical pathways, there are monthly meetings of multidisciplinary teams: surgeons, anesthesiologists, nurses, nutritionists, occupational and physical therapists, social workers, and pharmacists. They provide an integrated input on how to implement best practice guidelines for their specialty. The data collected have shown a decrease in length	Our focus was on the nature and practice of patient education rather than on other processes which may also contribute to length of hospital stay.

of stay in the hospital after surgery.	
This study showcases an important aspect of how a hospital can change to improve the pre-op and post-op environment for the patients. However, this change is only one aspect of a perioperative pathway. The information provided from this study improves this hospital; however it does not provide new information for other hospital systems that have a mature perioperative pathway.	This study used an action research approach to provide findings about one aspect **patient education** which could be seen to contribute to supporting enhanced recovery in the context of the whole system.
Comments: It is good to see a hospital implement changes to help improve patient's experience via education and feedback. However, the information uncovered is very specific to this hospital. In other hospitals, these issues have been resolved. The satisfaction surveys of the patients are important for providing good service; however this does not reflect an improvement in recovery after surgery. For example, if the pre-op, intra-op, and post-op procedures are all variable between surgeons, and surgical teams, the recovery of the patients after surgery with consistent patient education, might not change the length of stay in the hospital.	We see these issues as having been addressed by us in the two points immediately above.
Reviewer: 2 Reviewer Name: Lesley Gotlib Conn	
The paper reports on the development of patient education materials for enhanced recovery after surgery for colorectal surgery patients. The approach taken was mixed methods action research which engaged patients and their carers, as well as health care team members, in the design and evaluation of iterative cycles of pre-operative education material. In this paper the authors report on the qualitative interview data that informed their materials. They draw mainly on the patient and carer perspectives. The topic is certainly relevant as there is increasing use of enhanced recovery programs worldwide for many surgical procedures with an emphasis on tailored preoperative patient education and preparedness. In this case, the action research approach makes logical sense to involve all key stakeholders in the development of patient education which is shown to contribute to improved outcomes when effectively matched to the patients needs.	The authors are grateful for these comments. We have stated more explicitly that this was mixed methods action research – also relevant in response to Reviewer 3 (see below)
Overall I found the paper to be interesting. There are several areas where the reporting of this study could be strengthened and in doing so would put readers in a better position to use these findings to inform the delivery of ERAS patient education in their own settings. In its current form, the reader has very little sense of the context in which this research took place – the actual environment and by whom patient education is initially delivered and when and where it may be reinforced or, as one patient pointed out, contradicted. Is it the surgeon, a clinical nurse, a pre-admission unit nurse, and/or other staff who is counseling patients? Are written materials and counseling offered together, in sequence, etc? The authors have stressed that both education materials and the education processes are important to the success of the initiative, however, there is not much reported on the processes themselves. Perhaps a visual timeline could help us better understand how the counseling process unfolds, and who is actually involved at what time points and with what effects. The authors might consider giving a brief description of what patients were receiving prior to the first action cycle as well – where they received it, who delivered it, at what time points in their pre/post operative journey these materials were delivered/educated.	We see this issue as covered in the Context section in the Introduction in which we explain that pre-operative education "varied according to: surgery type; whether adjuvent chemotherapy was required; and who was working with the patient from a multidisciplinary team". Therefore the range of forms and processes of education is described here as being delivered, now clarifying within any one of a number of preoperative clinic appointments, but not within a standardised, sequential process. We have now made explicit that this was not a standardised process. A visual timeline could not be provided because of the variability in timepoints of

	delivery along the pre-/post operative journey.
It would also help to have more detail about how the actual implementation of changes happened. The description in the current paper does not touch at all on this. What barriers were encountered, if any, and how was the team able to address or overcome them? For example, some of the suggested changes appear not to be "quick fixes", such as the appropriateness of hospital food offered to patients. I also wondered about changes in the actual process of educating patients –did patients value being counseled more or less by different team members (e.g. surgeon v. nurse)? The data presented focus mainly on updating written or online material only. Were there any insights about the delivery of information from different team members, i.e. the processes?	The aim of this paper was not to describe the implementation methods which have been described in relation to the action research process itself, published elsewhere: Sheila Gregory, Fiona Poland, Nicola J. Spalding, Kevin Sargen, Jane McCulloch & Penny Vicary (2011): Multidimensional collaboration: reflections on action research in a clinical context, Educational Action Research, 19:3, 363-378, now included in the reference list. Each findings section (ARC 1-ARC 3) comments on changes in staff delivery of education including verbal forms and opportunities.
Given the large participant group and amount of data collection that the authors describe, the analysis seems a bit thin. The perspectives of the health care staff are largely absent from the paper – except for one quote. There is no methodology described for the qualitative approach. I did not find that the results section led me to be convinced of the concept of 'situated understanding' that the authors' put forth in the discussion. If this is the theory that has emerged as most salient from the findings, it may make sense to re-organize the results to substantiate this claim. There is likely some rich data that has not been included that would help to strengthen the authors' position on this point and give a reader a sense of how 'situated understanding' is produced in the pre-operative encounters between clinicians and their patients. Subsequently, the authors might demonstrate the variables or factors that promote or inhibit 'situated understanding' in this context.	As now made explicit in both the Procedures and (Also relevant as response to Reviewer 3 queries (see below) Discussion sections, a naturalistic enquiry approach (Lincoln and Guba 1985, now listed in References) was used to frame data collection and analysis. This is reflected in the reporting of context-specified results in which each finding is presented in relation to interactions through which participants identified the education issues relevant to them. This approach underpins the representation of findings as generating "situated understanding" within practice contexts. Quotes from staff have been added to results sections for ARC1 and ARC 2
Lastly, I wondered if the information in Figure 1 could be presented on a timeline to more clearly depict the order of events over time. Or perhaps as Cycle 1, Cycle 2, Cycle 3 with the relevant methods and participants indicated within each cycle? This would help the reader better visualize the iterative process of data collection, analysis, reflection/evaluation which is a bit confusing in the current image. This would also give us a sense of how long it took to make the changes, test them out, and evaluate.	The action research cycle components presented in Fig. 1 summarises the complete project which we see as most important to convey holistically rather than the sequence of events. The iterative process and duration of the study is described for the reader in relation to both procedures and findings in the main text.

Reviewer: 3 Reviewer Name: Lucia Zannini	
General Comments: This is a paper on a core topic in public health, that is to say patient education. Through it, health systems can improve patients' outcomes and the efficiency of care. The multi-method study described here, carried on as an action research, has involved not only patients and carers, but also healthcare professionals. I appreciated the choice of involving a patient in the research group. Nevertheless, the study design, its objectives and the main results are quite weak. I am therefore unable to recommend the publication of this paper in its actual form.	We have added significant detail on study design, and specificity of results which we believe strengthens the paper in these areas.
Title: The title: "Developing Patient Education to Enhance Recovery after Colorectal Surgery" does not completely fit the contents of the paper. This is mostly concentrated on which information patients need to cope with colorectal surgery, and enhanced recovery is just supposed to be a consequence of education, but it is not investigated in depth. Many aspects influence patient's perception of enhanced recovery, not only effective education about that process, but also the level of autonomy of the patient, his/her socio-economic status, the possibility of counting on a caregiver, once at home.	This paper does not claim to address all socio-economic factors which may enhance recovery, but focuses specific on how preoperative education can contribute to enhancing recovery, building on previous work and identifying connections with the context of practice.
Abstract: The abstract is consistent with the paper. I do not feel comfortable with "the depth of detail in the findings" you talk about here (see below).	Amended.
Introduction: Although the significance of the study is described in Table 1, you should make more explicit the rationale of your research: It is unclear how this study extends knowledge or fills a gap of knowledge about ERAS experiences in colorectal surgery. Patient education is one of the components of enhanced recovery; in this complex process, indeed, other components must be taken into in consideration; for example, the ability of healthcare professionals to select interventions that can be proposed earlier to surgery patients. The context should be described more in detail (i.e. how many professionals are involved in the peri-operative process? How many in patient education? How many beds do you have in your ward?) in order to let the reader understand if the experience described here can be replicated in his/her context. In any case, your research question should be specified at the end of the Introduction.	We wholeheartedly agree that "Patient education is one of the components of enhanced recovery" and as we explain above, we are addressing the contribution of preoperative patient education for managing colorectal surgical patients. Our concern is less with numbers of patients or numbers of staff as this was a qualitative investigation of the types of experiences of patients. We have added the research objective to the final paragraph of the introduction and, followed by its rationale.
Methods: The choice of qualitative method to explore patients' experience of colorectal surgery and their educational needs is well explained and documented. Nevertheless, I think that action research is not a "method", but a research strategy. Defining the qualitative research method you have chosen is pivotal to evaluate the coherence between you research question and the selected method and, what is more, between research method and data analysis process. Considering the data you have collected, I would define this study a "mixed-method" one, but, again, you need to define your search question, showing that, to be answered, different type of data must be collected.	Amended – discussed
Participants: It seems that participants were selected on a convenience basis. This is not considered the gold standard in qualitative research. You should explain why you chose that sampling method and when and why you stopped sampling. Moreover, you should point out how many participants refused participating in the research and why.	As qualitative research is for many reasons both an umbrella term for many different qualitative approaches and as it is common in qualitative research to be flexibly

	adapted to research purposes, settings and participants there is no one gold standard qualitative sampling procedure and no set requirement for sample size nor representativeness (and therefore no requirement to describe reasons for participant decisions not to participate as the question of bias does not arise providing the purposive criteria informing inclusion have been met). Appropriate description of the decisions underpinning sampling decisions is, instead a common requirement of qualitative research. We have provided this within the word limits of the manuscript (see responses to Reviewer 1 above).
Ethical Standards: The study adheres to ethical standards.	
Data collection: It is not clear whether the data collected in each phase come from the same patients (i.e.: are the observed patients the same that were later interviewed, in three different moments?). Considering that after each phase of the action research you introduced some innovations in the educational process, it is not clear to me whether you utilized the same instruments to gather data (i.e., the same questionnaire, the same interview grid). If yes, those instruments could have revealed inadequate in the second and third phase of the study, since you introduced innovations and the questionnaire or the interview should have been updated. Finally, I am not sure that an interview with the patient and his/her caregiver can be named "focus group" (which group?).	Amended. Data interviews now appended. The qualitative design which aimed to compare outcomes of cycles was not one which required data collection guides to be "updated".
Data analysis: Since a qualitative analysis have been carried on also on data gathered through questionnaires, it must be specified above (in "Procedures") that they were open-ended. If we consider data you collected in each phase (observations, questionnaires, focus groups, interviews), the procedure indicated for their analysis is quite superficial.	Amended - discussed
Results: Many data have been collected, in different phases, but I feel that they have not been valorized as they could have had. For example, you do not report in the findings data derived from the questionnaires. Furthermore, it is not clear if differences were found among patients with different education, age, gender and economical status. Educational needs can vary consistently, considering, for instance, the level of instruction of a patient and his/her capacity/possibility to have access to Internet. I recognize that Fig. 2 (Tab. 2?) contains many results, but they are not grounded on your data.	Findings have been presented for all cycles which can be seen to draw on all types of participant data collected, including questionnaires. The action research analysis did not require demographic contextualisation as the emphasis here was on the nature and scope of education changes sought and enacted. We agree that educational needs and processes vary. Our context section highlights many areas of inconsistency and discontinuity in practice which included the study setting which were part of our

	study rationale. How these discontinuities could be identified and addressed is demonstrated through the action research findings. These have been amended.
Discussion: I think that the discussion, even if synthetic and clear, is completely disconnected by both data and literature. The result of this study is a very general conclusion, which do not value the amount of information you gathered. I think that too many data are presented in this paper and, probably due to shortness of space, everything is exposed in a very synthetic but superficial manner.	We have added references in the discussion to connect it to the literature and to clarify links to the diagram, whilst still having to be economical within our word limit. As the purpose of this paper was to examine what the action research findings to enhance the contribution of preoperative education for colorectal surgery to enhanced recovery, rather than a detailed examination of either the action research process or data produced reported elsewhere (as noted in response to Reviewer 2).

VERSION 2 – REVIEW

REVIEWER	Lee-lynn Chen University of California at San Francisco, USA
REVIEW RETURNED	11-Jan-2017

GENERAL COMMENTS	The revised manuscript reads a lot better than before. Although, the results are not new, the paper does provide a good reminder of the importance of patient education and the effects of good communication between providers and patients.

REVIEWER	Lesley Gotlib Conn Sunnybrook Research Institute
REVIEW RETURNED	02-Jan-2017

GENERAL COMMENTS	While the authors have addressed some of the comments of all reviewers, I'm afraid I do not believe the manuscript can be recommended for publication in its current form. The topic is important but it has not been made clear what is new about this particular study and what the contribution of this study is to our current knowledge of patient education and engagement in enhanced recovery after surgery implementation. I felt lost while reading the paper (and read it over a few times) which still lacks a theoretical narrative which is typically produced in qualitative research. There are methodological shortcomings, or at least there appear to be in the way the qualitative methodology is reported. To this end I agree with comments made by Reviewer 3. The discussion is not directly linked to the results that are presented it seems and is vague. The points raised in the discussion are very

	high level while the sub-themes that are described in the results are more granular. The manuscript feels more like a descriptive report than a scholarly article. It should also be read carefully for grammar and typos.

REVIEWER	Lucia Zannini University of Milan, Italy
REVIEW RETURNED	10-Jan-2017

GENERAL COMMENTS	Thank you for giving me the opportunity to review this paper again. I think that the modifications introduced by the Authors make the paper clearer and more flowing. Nevertheless, some uncertainties remain on this paper, which can be synthetized as follows: - As can be argued by the title ("Developing Patient Education to Enhance Recovery after Colorectal Surgery Through Action Research"), Authors put in direct connection perioperative patient education (PE) and enhanced recovery after surgery (ERAS), while literature clearly states that PE is <u>one</u> of the components of ERAS; to enhance recovery, other activities should be performed by healthcare professionals, regarding i.e. patient's nutrition and intensive postoperative mobilisation. This qualitative research can not demonstrate that PE facilitate ERAS and, for this reason, I think that "enhanced recovery" should be canceled from the title. - The results (need for time-specific and situation-relative information; ensure better preparation for patients for hospital processes and arrangements; …availability of web-based patient information) are very generic and could have been easily obtained through administration of questionnaires. Qualitative research findings should illuminate unknown aspects of certain experiences (i.e. colorectal surgery) giving to the professionals new insights for their practice. - The discussion is too synthetic and does not compare the study results with those reported by similar research. In case the Editor will decide to accept the paper in this version, I point out: - P. 3, lines 42-46: please move this phrase after "staff "(line 26). - P. 12, line 21: please insert a comma after patient - P. 15, line 11: change says with say - P 18, lines 49-51: I would change "equal foundations" with "necessary conditions"

VERSION 2 – AUTHOR RESPONSE

Many thanks for reviewing this article and providing such detailed suggestions for developing it further. Our responses to your requests are outlined in the table below. We hope our responses have addressed these, while also being mindful of the word count for this manuscript.

Editorial Requests:	Author Responses
Reviewer 1 Reviewer Name: Lee-lynn Chen	
The revised manuscript reads a lot better than before. Although, the results are not new, the paper does provide a good reminder of the importance of patient education and the effects of good communication between providers and patients.	We thank the reviewer for these comments. We see the messages about the importance of patient education and the effects of provider-patient communication in achieving this are important to detail and to share
Reviewer: 2 Reviewer Name: Lesley Gotlib Conn	
The topic is important but it has not been made clear what is new about this particular study and what the contribution of this study is to our current knowledge of patient education and engagement in enhanced recovery after surgery implementation	We have made clear that what this paper provides is to specify the role of pre-op education in terms of developing and evaluating both educational content and processes, as contributing to enhanced recovery. This clarification has been thoroughgoing from the title changes through each section.
I felt lost while reading the paper which still lacks a theoretical narrative which is typically produced in qualitative research	This has been addressing by clarifying the objectives and therefore the focus of this paper and by ensuring the presentation of thematic findings e.g. sub-section headings, can be seen to more directly map onto the conceptual considerations in the Discussion, as overviewed in Fig. 3. Fig.2 has also been re-aligned
There are methodological shortcomings, or at least there appear to be in the way the qualitative methodology is reported. To this end I agree with comments made by Reviewer 3.	We have thoroughly revised the document in terms of framing, analysis and selection of findings to address this.
The discussion is not directly linked to the results that are presented it seems and is vague. The points raised in the discussion are very high level while the sub-themes that are described in the results are more granular.	We have made clearer how the presentation of the results identified specific ways in which pre-operative education as one component of ERAS can support patients' active engagement in enhanced recovery. The discussion is now closely linked to findings and also to similar research, mainly discussed in the introduction.
The manuscript feels more like a descriptive report than a scholarly article	We have thoroughly revised the document in terms of framing, analysis and selection of findings through to discussion and conclusion to address this
It should also be read carefully for grammar and typos.	We have corrected grammar and typos
Reviewer: 3 Reviewer Name: Lucia Zannini	
I think that the modifications introduced by the Authors make the paper clearer and more flowing.	We are grateful to the reviewer for this observation
As can be argued by the title ("Developing Patient Education to Enhance Recovery after Colorectal Surgery Through Action	We agree that the paper appeared to infer that "enhanced recovery" in

Research"), Authors put in direct connection perioperative patient education (PE) and enhanced recovery after surgery (ERAS), while literature clearly states that PE is one of the components of ERAS; to enhance recovery, other activities should be performed by healthcare professionals, regarding i.e. patient's nutrition and intensive postoperative mobilisation. This qualitative research can not demonstrate that PE facilitates ERAS and, for this reason, I think that "enhanced recovery" should be cancelled from the title.	a medical sense was a direct result of patient education. This was not our intention. We agree and have specifically strengthened our research objectives (and re-stated in both Abstract and Introduction) and the evidence base in our literature review to examine PE as one distinct component of an ERAS multimodal approach (so requiring qualitative data) as our focus in this paper. We have therefore changed the discourse within the paper, but elected to retain "enhanced recovery" in the title, which is now clearly connected to the specific focus on PE.
- **The results** (need for time-specific and situation-relative information; ensure better preparation for patients for hospital processes and arrangements; …availability of web-based patient information) **are very generic** and could have been easily obtained through administration of questionnaires. Qualitative research findings should illuminate unknown aspects of certain experiences (i.e. colorectal surgery) giving to the professionals new insights for their practice. - The discussion is too synthetic and does not compare the study results with those reported by similar research.	We have made clearer how the presentation of the results identified specific ways in which pre-operative education as one component of ERAS can support patients' active engagement in enhanced recovery. The discussion is now closely linked to findings and also to similar research, mainly discussed in the introduction.
- P. 3, lines 42-46: please move this phrase after "staff "(line 26).	We do not have and could not create a document which corresponded with the reviewer's line numbers and so could not determine what "this phrase" was referring to nor where to move it to. Reproducing phrases and sentences to clearly identify would be helpful. But perhaps this could be done if still required, in proofreading if accepted.
- P. 12, line 21: please insert a comma after patient	As in previous row
- P. 15, line 11: change says with say	We cannot change this as it is a direct participant quote using their language
- P 18, lines 49-51: I would change "equal foundations" with "necessary conditions"	We agree that "necessary" helps clarify here, but do not see "conditions" as conveying our point about these providing a basis for supporting enhanced recovery. We have therefore substituted the phrase "necessary foundations to support…."
Anticipating necessary clarifying changes we will not be able to make at proofreading (if accepted) e have also edited (and shown in Track Changes): Abstract: Setting descriptive details. Abstract Results penultimate sentence corrected We have made several small editorial corrections throughout – again shown in Track Changes.	